IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

- 1. (Currently amended) A sample separation apparatus, comprising:
 a <u>substantially solid</u> substrate <u>comprising at least one of silicon, gallium arsenide, and indium phosphide</u>;
- matrices formed in said substrate, saidthe matrices comprising at least two distinct, unconnected porous regions comprising the same material as the substrate, each of saidthe at least two porous regions extending at least partially across saidthe substrate; and at least one detector comprising a thermal detector, a field effect transistor, or a voltage application component and a current detection component fabricated on saidthe substrate in communication with at least one of saidthe at least two porous regions.
 - 2. (Canceled)
- 3. (Currently amended) The sample separation apparatus of claim 1, wherein each of saidthe at least two porous regions comprises a capillary column.
- 4. (Currently amended) The sample separation apparatus of claim 1, wherein each of saidthe at least two porous regions linearly traverses saidthe substrate.
- 5. (Currently amended) The sample separation apparatus of claim 1, wherein one of saidthe at least two porous regions extends only partially across saidthe substrate.
- 6. (Currently amended) The sample separation apparatus of claim 5, wherein one of saidthe at least two porous regions comprises a control column.

- 7. (Currently amended) The sample separation apparatus of claim 1, further comprising a reaction region immediately situated along a length of and contiguous with at least one of said the at least two porous regions.
- 8. (Currently amended) The sample separation apparatus of claim 7, wherein saidthe reactant region comprises a capture component.
- 9. (Currently amended) The sample separation apparatus of claim 7, wherein saidthe reaction region is situated at a predetermined distance from an end of saidthe at least one porous region.
- 10. (Currently amended) The sample separation apparatus of claim 5, further comprising reaction regions situated immediately along lengths of each of saidthe at least two porous regions.
- 11. (Currently amended) The sample separation apparatus of claim 10, wherein a distance between a first of saidthe reaction regions and an end of a first of saidthe at least two porous regions is substantially the same as a distance between a second of saidthe reaction regions and an end of a second of saidthe at least two porous regions.

12. (Canceled)

- 13. (Currently amended) The sample separation apparatus of claim 1, wherein saidthe at least one detector comprises a thermal detector.
- 14. (Currently amended) The sample separation apparatus of claim 1, wherein saidthe at least one detector comprises a field effect transistor.

- 15. (Currently amended) The sample separation apparatus of claim 1, wherein saidthe at least one detector comprises a voltage application component and a current detection component.
- 16. (Currently amended) The sample separation apparatus of claim 1, further comprising a processor on saidthe substrate.
- 17. (Currently amended) The sample separation apparatus of claim 1, further comprising a memory device on saidthe substrate.
- 18. (Currently amended) The sample separation apparatus of claim 1, further comprising a migration facilitator in communication with at least one of saidthe at least two porous regions.
- 19. (Currently amended) The sample separation apparatus of claim 18, wherein saidthe migration facilitator comprises a pump in communication with a first end of saidthe at least one porous region.
- 20. (Currently amended) The sample separation apparatus of claim 19, further comprising a control valve situated between saidthe pump and saidthe first end.
- 21. (Currently amended) The sample separation apparatus of claim 18, wherein saidthe migration facilitator comprises a vacuum source operatively in communication with a second end of saidthe at least one porous region.
- 22. (Currently amended) The sample separation apparatus of claim 18, wherein saidthe migration facilitator comprises a first electrode adjacent saidthe first end of saidthe at least one porous region and a second electrode adjacent a second end of saidthe at least one porous region.

- 23. (Currently amended) The sample separation apparatus of claim 22, wherein said the first electrode is a cathode.
- 24. (Currently amended) The sample separation apparatus of claim 22, wherein saidthe second electrode is an anode.
- 25. (Currently amended) The sample separation apparatus of claim 1, further comprising a stationary phase disposed in at least one of saidthe matrices.
- 26. (Currently amended) The sample separation apparatus of claim 25, wherein said the stationary phase comprises a capture substrate.
- 27. (Currently amended) The sample separation apparatus of claim 26, wherein saidthe capture substrate comprises an antibody.
- 28. (Currently amended) The sample separation apparatus of claim 26, wherein saidthe capture substrate comprises an antigen.
- 29. (Currently amended) The sample separation apparatus of claim 1, further comprising a sealing element situated over at least a portion of at least one of saidthe at least two porous regions.

30-110 (Canceled)

111. (New) The sample separation apparatus of claim 1, wherein the substrate comprises a semiconductor material.

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112. (New) The sample separation apparatus of claim 111, wherein the semiconductor material comprises silicon, gallium arsenide, or indium phosphide.